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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,895	11/18/2003	Takami Iwafuji	8023-1023	2813

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EXAMINER

NGUYEN, TUAN N

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/714,895

Applicant(s)

IWAFUJI, TAKAMI

Examiner

Tuan N. Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-18 is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of 35 U.S.C. 102(b) which forms the basis for all obviousness rejections set forth in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 7, 10 are rejected under 35 U.S.C. 102(b) as being unpatentable over Gaebe et al. (US 5264392).

With respect to claim 1, Gaebe '392 discloses a semiconductor laser chip unit comprising: an electrode pattern and a ground electrode (Fig 9: 38, 40, 47, 70, 74) having a semiconductor laser chip which is die-bonded to the ground electrode and outputs a laser beam according to a high-frequency signal transmitted from the electrode pattern and the ground electrode (Fig 9: 46)(Col 4: 30-35 chip carrier bonded to laser 40), and a collimator lens for collimating the laser beam from the semiconductor laser chip (Col 3: 50-60 collimated signal via spherical lens), wherein each of the electrode pattern, the ground electrode, the semiconductor laser chip and the collimator lens is integrated in a non-conductive heat sink so as to form a unit (Fig 9: 20,34,38,46,47,48-78) (Col 1: 1-40; Col 2: 10-40 components mounted on a single silicon-based submount)(ABSTRACT).

With respect to claims 2-4 Gaebe '392 shows the semiconductor laser chip is fixed with a support of a groove or a hole (Fig 1: 20,30,38) at such a position that the laser beam from the semiconductor laser chip is made incident on a surface of the collimator lens at approximately a focal point of the collimator lens (Fig 2: laser 40 incident on collimator lens 20); wherein the groove is formed along a travelling direction of the laser beam.

With respect to claim 5, Gaebe '392 discloses the collimator lens may be a spherical lens or a non-spherical lens (Col 3: 55-60 square or spherical lens).

With respect to claims 6, 10 Gaebe '392 discloses the use of metallic strip attached to chip carrier which provide higher heat conductivity than a Si material (Col 6: 50-65), and he further shows the electrode pattern and the ground electrode are formed as a coplanar line (Fig 9: 38, 74, 78, 47, 70, 72) (Col 6: 49-50 coplanar connection subassembly).

With respect to claim 7 Gaebe '392 shows where exposed lens surface of the collimator lens is expanded by forming a step on a portion of the heat sink where the collimator lens is fixed (Fig 4: 20,36).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

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4. Claims 8,9,11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaebe et al. (US 5264392).

With respect to claim 8, the claim further requires the heat sink formed of aluminum nitride and bonding is formed on indium phosphate. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice, in this case the bonding is indium phosphate or the like, to bond or increase heat transfer between the elements to increase the life of the laser.

With respect to claim 9, the claim further requires the semiconductor laser chip outputs a front light and a back light from a front end surface and a back end surface, respectively, and uses the back light as the laser beam. Gaebe '392 did not discretely disclose the back light from the back end of the laser diode as the laser beam, however Gaebe '392 did disclose the use of backface monitor 46 for the laser diode. It is obvious to one skill in the art to recognize that there is a laser beam coming out from the back so the laser beam can be monitored and be used (Col 5: 30-35).

With respect to claim 11, the claim further requires the ground-electrodes are formed on opposing end surfaces of the heat sink respectively, and are connected through a via hole formed in the heat sink. . It has been held that rearranging parts of an invention involves only routine skill in the art, in this case the ground electrodes are formed on opposing end for the purpose of keeping the component compact on the same device. In re Japikse, 86 USPQ 70.

REASON FOR ALLOWANCE

Allowable Subject Matter

5. The following is an examiner's statement of reasons for allowance, with respect to claim 13 the references of the record fail to teach or suggest:

Claim 13:

A semiconductor laser chip module comprises a semiconductor laser chip unit, having a wavelength detection means passing through a collimator lens, a temperature control means of the laser incorporated in a package, wherein the semiconductor chip unit comprises an electrode pattern and a ground electrode, where the laser diode is die-bonded to the ground electrode, and a collimator lens for collimating the semiconductor laser beam excited by the electrode pattern and ground, wherein the semiconductor chip/electrode pattern/ ground electrode/ and collimator lens is integrated in a nonconductive heat sink to form a unit.

Allowable Subject Matter

6. Claim 12 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The references of the record fail to teach or suggest:

Claim 12:

Wherein the heat sink includes a resistance as an end of the high-frequency signal transmitted through the electrode pattern and ground electrode, and a condenser for protecting the semiconductor laser chip from a surge current of a bias current.

Communication Information

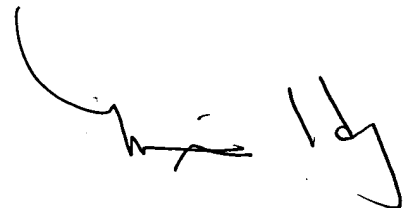
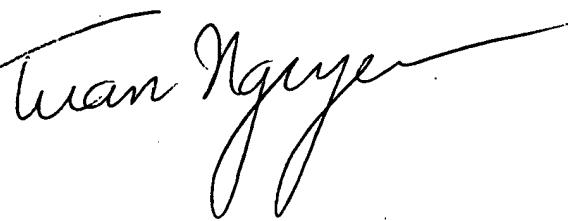
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan N. Nguyen



MIN SUN CHU
PRIMARY EXAMINER